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THE COUNCIL FOR TOBACCO RESEARCH—U.S.A., INC.

110 EAST 59TH STREET
NEW YORK, N. Y. 10022
(212) 421-8885

Application for Research Grant
(Use extra pages as needed)

Date: 9.1.1974

1. Principal Investigator (give title and degrees):

Dr. Ilari Rantasalo M.D., Professor and Chairman
Department of Public Health Science
University of Helsinki

2. Institution & address:

Department of Public Health Science
University of Helsinki
Haartmaninkatu 3
SF 00290 Helsinki 29, FINLAND

3. Department(s) where research will be done or collaboration provided:

see the point two

4. Short title of study:

The Finnish Twin Registry

5. Proposed starting date: 01.01.1974

6. Estimated time to complete: over ten years

7. Brief description of specific research aims:

It is our aim to research the connection of some diseases (coronary heart disease, chronic lung diseases, malignant tumors etc) and various environmental factors (tobacco smoking, alcohol drinking, stress etc) using twin metod:

- a) as a part of an international study
- b) creating at the same time a basic register for further studies.

Program of the year 1974:

- a) the creation of the address registry of the same sex twins in Finland.
- b) the working out of the mailed "Miami" questionnaire including the optional questions.

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8. Brief statement of working hypothesis:

2.

Using the twin method it is possible to study environmental factors so that the genetic factors are standardized.

Working hypothesis was documented in San Juan Report:

"Twin Registries in the Study of Chronic Disease"

(Acta Medica Scandinavica, supplementum 523, 1969)

9. Details of experimental design and procedures (append extra pages as necessary)

Compilation of the address registry

The central registry of population records all Finnish people, who live in Finland. This information is recorded on magnetic tapes in two registries: the personal registry and the real estate registry.

The personal registry contains among other things the following particulars:

- personal number (birthdate plus a unique individual number)
- sex
- native place of birth
- surname and first name
- maiden name for married women
- symbol for native place
- civilian estate
- from the beginning of 1975 also the personal numbers of parents and children will be on the tape.

The real estate registry contains among other things the address.

The procedure of collecting the twin registry will be the following. All people with the same birthdate, the same sex, the same surname (in the case of women the maiden name will be used), and the same native place of birth will be grouped together. Starting from this tape it is then a purely computerized procedure to get hold of the addresses by matching the personal registry with the real estate registry.

This list of people (= candidates) certainly contains false pairs, i.e. pairs where names, place of birth and birthdate coincide by chance, which will probably happen frequently only in larger locations. By the help of a mailed questionnaire it is possible to pick up the twin pairs from the mass of the candidates and to get basic data at the same time. From the beginning of 1975 it is possible to repair this twin tape using the personal numbers of mother: twins are people who have the same birthdate (or adjoining day) and the same mother.

The size of the sample (all people available in Finland)

It is profitable to create the address registry from all age groups at the same time, though we intend at the beginning to study only people over 20 years of age. The size of the twin population appears from the following table.

see appendix number one

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3.

10. Space and facilities available (when elsewhere than item 2 indicates, state location):

The Department of Public Health Science has extra space sufficiently for the Finnish Twin Registry.

The department has a terminal of the computer of the university (UNIVAC 2000). The punching and the analysis of the material are possible to perform with the help of the department's facilities.

11. Additional facilities required:

12. Biographical sketches of investigator(s) and other professional personnel (append): appendix II

13. Publications: (five most recent and pertinent of investigator(s); append list, and provide reprints if available):

appendix III

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14. First year budget:

A. Salaries (give names or state "to be recruited")
Professional (give % time of investigator(s)
even if no salary requested)

	% time	Amount
Principal investigator	5 %	_____
Designer, 3000 Fmk/kk x 12	60 %	36 000 Fmk

Technical

two clerks 1500 Fmk/kk x 10 x 2	100 %	30 000
three clerks 1300 Fmk/kk x 9 x 3	100 %	35 100
(one for punching and two for coding)		
- social security 8 %		8 090

Sub-Total for A 109 190

B. Consumable supplies (by major categories):

Postage 40 000 x 2 x 0,6 Fmk	48 000
Envelopes 40 000 x 4 x 0,03 Fmk	4 800
Printing of forms 40 000 x 2 x 0,3 Fmk	24 000

Sub-Total for B 76 800

C. Other expenses (itemize)

Computer costs, candidates of twins + addresses	27 000
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Sub-Total for C 27 000

Running Total of A + B + C 212 990

D. Permanent equipment (itemize)

Sub-Total for D 31 950

E. Indirect costs (15% of A+B+C)

E 244 940 Fmk = 61 235 \$

15. Estimated future requirements:

(1 \$ = 4,00 Fmk 8.1.1974)

	Salaries	Consumable Suppl.	Other Expenses	Permanent Equip.	Indirect Costs	Total
Year 2	128 300	57 600	38 000	_____	33 600	257 500 Fmk
Year 3	128 300	57 600	18 000	_____	30 600	234 500 Fmk

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16. Other sources of financial support:

List financial support from all sources, including own institution, for this and related research projects.

CURRENTLY ACTIVE

Title of Project	Source (give grant numbers)	Amount	Inclusive Dates
The Finnish Twin Registry	own institution	2000 \$	1974
Married couple study	Yrjö Jahnsson's foundation	1750 \$	1974

PENDING OR PLANNED

Title of Project	Source (give grant numbers)	Amount	Inclusive Dates
The Finnish Twin Registry	Academy	25 000 \$?	1975-1976

It is understood that the investigator and institutional officers in applying for a grant have read and accept the Council's "Statement of Policy Containing Conditions and Terms Under Which Project Grants Are Made."

Principal investigator

Typed Name Ilari RantasaloSignature *Ilari Rantasalo* Date 9.1.1974Telephone Helsinki 418 511
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University of Helsinki

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Responsible officer of institution

Typed Name Ilari RantasaloTitle Professor and ChairmanSignature *Ilari Rantasalo* Date 9.1.1974Telephone Helsinki 418 511
Area Code Number Extension

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Appendix I (The Finnish Twin Registry)

The table is an estimation based on number of in Finland living people of the same ten-years groups, number of twin births in the ten-years groups, mortality of twins according to partner.

It is also estimated that 63 % of the twin pairs are of the same sex and that 33 % of the same sex are identical.

ESTIMATED NUMBERS OF TWIN PAIRS OF THE SAME SEX IN FINLAND

YEAR OF BIRTH	MONOZYGOTIC		DIZYGOTIC	
	MALE	FEMALE	MALE	FEMALE
1891-1900	58	117	115	235
1901-1910	184	271	368	542
1911-1920	351	452	703	905
1921-1930	401	481	802	962
1931-1940	738	732	1476	1464
1941-1950 x)	617	594	1233	1188
total	2349	2647	4697	5296
	4996		9993	

TOTAL NUMBER OF PAIRS 14 989

x) migration of people from Finland (mainly to Sweden) has reduced this age group.

Follow-up studies

Morbidity

It is possible to get information (except using questionnaires) from the Central Medical Board (CMB), from the Institute of Health Insurance (IHI), from the Finnish Cancer Registry, from the Kidney Disease Registry, from the Malformation Registry, and from the Coronary Registries of some larger towns.

The CMB records all people, who have left hospital (surviving or dead).

The IHI records all people, who have got money or service as compensation for a disease.

Mortality

The Central Statistical Office records all death certificates.

Some other things

The Administration of the State has many registries on magnetic tapes. The most interesting of them are registries consisting among other things crimes, traffic offenses and earned income.

The follow-up with all these means is possible purely with the help of computers.

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Biographical sketches:

Principal investigator (Ilari Rantasalo)

- born 1916
- licenciate in medicine 1946
- doctor of medicine (= dissertation) 1948
- specialist in:
 - pediatrics
 - infectious diseases
 - laboratory investigation (microbiology)
 - public health
- assosiate professor in pediatrics 1959
- principal occupations:
 - 1948-1963: Head of the bacteriological department of the State Serum Institute
 - 1964- : Professor and Chairman of the Department of Public Health Science
(before 1971 the name was called Department of Hygiene)

Designer (Markku Koskenvuo)

- born 1945
- licenciate in medicine 1972
- some substitutes as assistant physician in departments of internal medicine 1968-1972
- assistant of Department of Public Health Science 1972-.

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Appendix III (The Finnish Twin Registry)

Publications:

Rantasalo:

The published papers (list of them) during Rantasalo's chairman period in the department of Public Health Science are enclosed (from years 1966-1972).

Koskenvuo:

A married couple study, a method for measuring environmental factors adapting to coronary heart disease. (Dissertation, unpublished)

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